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# Applying the Growth Diagnostics Approach: the Case of Bolivia<sup>1</sup>

Sara Calvo<sup>2</sup>  
The World Bank

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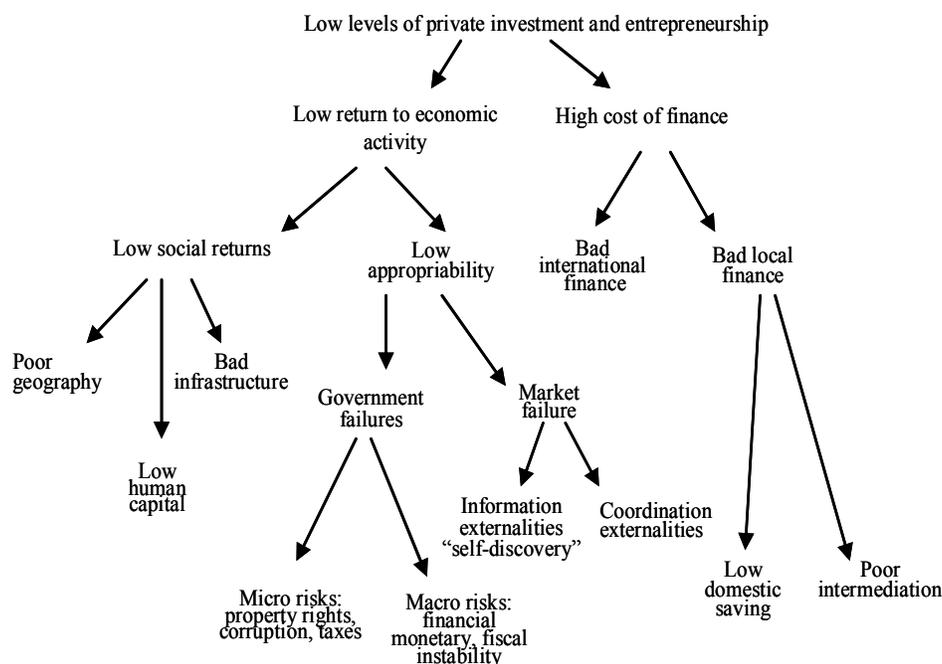
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## Introduction

Bolivia is one of the 12 country cases selected by the World Bank to apply on a pilot basis the growth diagnostics (GD) approach developed by Hausmann, Rodrik and Velasco (2005).<sup>3</sup> In the GD approach, faster growth will take place if the private returns to asset accumulation, net of the cost of financing it, are high. This is expressed as  $\text{growth} = \delta \{[(1-\omega) \times \Theta] - r\}$ , where  $[(1-\omega) \times \Theta]$  is the private return to accumulation adjusted by the risk of appropriation,  $\omega$ , and social returns,  $\Theta$ ; and  $r$  is the cost of financing. Figure 1 (Hausmann et al) shows the decision tree involved in the approach. If the level of private investment is low, is that because the returns on economic activity are low and/or because the cost finance is high? If the latter, is this due to obstacles to access to domestic finance or/and international finance? And so on. In this paper we present the evidence that help us conclude on each of steps of the decision tree. As indicate in Hausmann et al, the superiority of this over other growth determinants approaches is the possibility to identify and hence for policymakers to address a small number of key obstacles to growth—the binding constraints, as opposed to addressing the many determinants typically identified in regression analysis.

Figure 1: Growth Diagnostics



<sup>3</sup> The other pilot cases were: Armenia, the Baltic countries, Bangladesh, Brazil, Cambodia, Egypt, India, Madagascar, Morocco, Tanzania, and Thailand. See Leipziger and Zaghera (2006) for the conclusions of the project.

Why Bolivia's growth performance has not been as expected given deep reforms since the mid-1980s? Available studies based on regression analysis and summarized in Kaufmann et al. (2003) suggest that all, macroeconomic management; trade policy; taxation; political instability; weak institutions; infrastructure; education; geography; ethnic conflicts; external factors; financial sector weaknesses; and the overall investment climate are significant determinants of growth in Bolivia. Our diagnostic suggests that we cannot reject the hypothesis that stubborn uncertainty about future private returns (or private appropriability risks) deriving from the interplay between social, political and economic factors has been Bolivia's binding constraint to faster growth. The economic factors behind this uncertainty appear to be external and internal factors leading to macro-financial instability and poor enforcement of contracts and property rights.

Following the framework depicted in Figure 1, in what follows we explore the sources of Bolivia's low investment rates since the early 1990s.

### 1. Sources of low levels of private investment

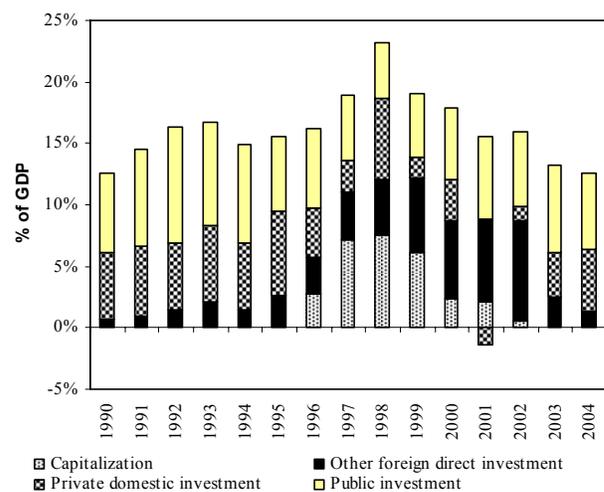
Bolivia's investment performance since the 1990s has been poor. The gap between the economy's and Latin America's investment in terms of GDP has widened since the 1970s (Table 1). During the mid-1990s and until the early 2000s, foreign direct investment (FDI) increased significantly. This was directed primarily to buy public enterprises, and the financial and the hydrocarbons sectors. However FDI plunged after 2002 as the privatization of public enterprises was virtually completed and uncertainty about a new hydrocarbons law surfaced (Figure 2). Domestic private investment at around 5 per cent of GDP was steady until the mid-1990s, but since then it has been quite volatile. What has kept investment so low and volatile in Bolivia? High risk of appropriability of returns, high cost of financing, or low social returns?

Table 1. Investment Rates, % of GDP (averages)

	Bolivia	Latin America
1970s	18	20
1980s	14	19
1990s	17	21

Source: Morales (1990), WDI (various years)

Figure 2. Bolivia. Investment, % of GDP



Source: INE and BCB

## ***A. High risk of appropriability of private returns?***

High risk of appropriation of private returns, as illustrated in Figure 1, could be the result of government failures such as uncertainty about macroeconomic stability and economic and regulatory policy, as well as of market failures reflected in absence of information or coordination externalities that typically lead to productive sectors far behind in terms of innovation and implementation of new technologies.<sup>4</sup> These sources are discussed below.

### ***i) Macroeconomic risks?***

Bolivian entrepreneurs have identified uncertainty about macroeconomic stability and economic and regulatory policy as the leading constraints to business expansion (World Bank, 2001b). Evidence of these perceptions include: stubborn dollarization (around 80 percent of bank deposits and loans in 2005), virtually stagnant investment in sectors other than gas or soy sectors, and capital outflows—measured by errors and omissions of the balance of payments-- at around 4-5 percent of GDP annually.

Concerns about the stability of the economy are not unfounded. First, economic policies change frequently due to political and social pressure, making difficult to plan investment and hence leading to the expectation of a stagnant economy. Second, sudden withdrawals of bank deposits may lead to an injection of unwanted domestic currency by the Central Bank and this in turn to a depreciation of the currency (if international reserves are not enough to honor the depositor request to withdraw their funds. The economy is highly liability-dollarized also (e.g., 90 percent of bank loans are dollar denominated, 2005); hence for dollar-indebted firms, in particular those with domestic currency denominated income, e.g., firms in the non-tradable sector, changes in the exchange rate will reduce profitability. In recent years, higher service payments on dollar debt due to high interest rates and exchange rate depreciation led to a 50 percent drop in firm profitability (World Bank 2004b). At the individuals' levels, a depreciation of the exchange rate will reduce their capacity to consume, given reduced wealth in dollar terms (World Bank 2004a and b). At the public sector level, a depreciation of the exchange rate may turn a financial crisis into a solvency crisis (like in Mexico in 1994 and in Argentina in 2001). This in turn will have a stronger impact on low-wage earners and hence may lead to social unrest.

The sources of the macro risks of the Bolivian economy are primarily in the fiscal and financial sector fronts. In the *fiscal front*, despite the deep adjustments in several occasions since the mid-1980s, Bolivia's overall fiscal deficit and the public debt have been high (Table 2). The economy reduced the primary deficit significantly twice, during the late 1980s in the context of a stabilization program to attack hyperinflation, and in the mid-1990s as a result of privatization that reduced the number of public employees and hence reduced the public wage bill (The privatization proceeds were distributed among Bolivians and are kept in special accounts). During 1997-2004 the overall budget deficit (after grants) amounted to an average of 5.6 per cent annually, reaching around 9 percent

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<sup>4</sup> Hausmann and Rodrik (2002) and World Bank (2002).

during 2001-2002. Sustained grants and official credit since the stabilization effort of the mid-1980s (reaching around 6 percent of GDP on average in recent years) have helped finance the reforms that contributed to high budget deficits, and have prevented major disruptions in the provision of social services, including social protection programs that became critical in the face of the slow-down of the economy since 1998. Since 2003 there have been progressive improvements in the fiscal situation. However, much of it is associated with the increased revenue due to favorable terms of trade. Also, a new hydrocarbons law since 2005 increased the percentage of royalties applied to private sector hydrocarbon companies.

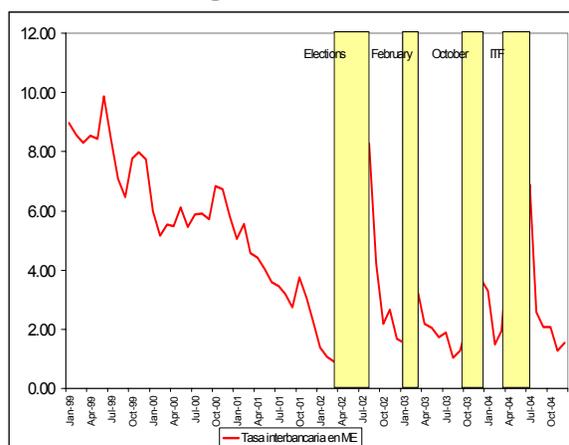
Social conflicts have deepened fiscal problems. In recent years, teacher strikes led to fast increases in wages that reversed the reduction of the public wage bill achieved through privatization of public enterprises. Also, recent increases in pension benefits for the military contributed to today's high cost of pension. On the revenue side, tax revenue is high--compared to other Latin American economies-- at around 22 percent of GDP (2004), but 85 per cent comes from the hydrocarbon sector. The economy has the potential to generate more revenues from this sector—and thus comfortably finance its reforms-- but social pressure has not allowed the Government to remove the freeze on fuel prices implemented to buffer the impact of shocks. Also, non-hydrocarbons tax collections are poor. Bolivia ranks poorly in effectiveness of tax collections (Figure 4). Several attempts to implement a tax reform to increase fiscal revenue were aborted in response to social pressure (IMF, 2005).

In *the financial sector*, despite deep reforms and today being one of the best financial systems in the region, financial troubles have been a constant since the 1980s, despite being (Table 2 and Annex 1). Deposits and loans have been decreasing since 1998, which has lowered bank profitability. Only recently have interest rates come down, reportedly due to lack of creditworthy borrowers (Table 2), as discussed below. The banking system suffered frequent sudden withdrawals of deposits, i.e., bank runs. These were driven by political and social developments, e.g., the elections of 2002 that revealed the high popularity of coca producer groups, that triggered memories of cycles of expansionary fiscal policy, monetary financing of budget deficits and exchange rate devaluations and high inflation. These bank runs were incipient but with long-lasting effects due to spikes of overnight interest rates in an attempt to preserve the stability of the exchange rate (Figure 3). In recent years, bank non-performing loans increased to 19 percent of total loans in 2001 and remain high although improving (15 percent in 2004).

In *the monetary and exchange rate front* there has been stability, however. The reforms of the mid-1980s attacked inflation. And the *real exchange rate*, particularly since the mid-1990s has been stable. The combination of a credible monetary and exchange rate policy, appreciation of the currency in trading partners, and stable net capital flows-- made of high official inflows, private capital outflows, and apparently lower external transfers from coca eradication-- have kept the real exchange rate (RER) stable. The RER embodies both the weighted RER with respect all trading partners and that with respect to Latin America's. Bolivia's exports to the LAC region account for more than half percent of total exports. Coca transfers before the eradication program have been estimated at around 4-5 percent of GDP. Discrete changes in RER in 1999 and

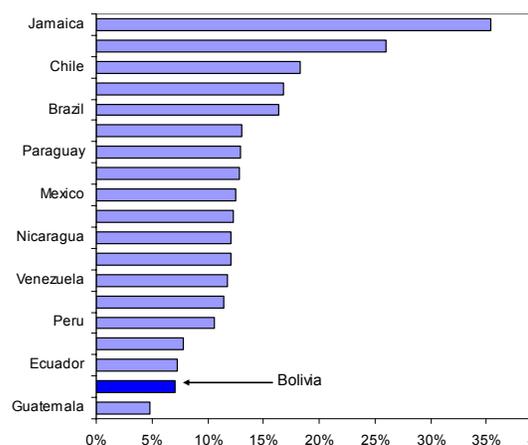
2001 have been driven by devaluations in Brazil and Chile and Argentina, respectively. Aside from these step changes, the RER has been quite stable. Several empirical studies show that the stability (as opposed to the level) is what matters to promote exports.

Figure 3 Social and Political Volatility and Overnight Interest Rates



Source: Banco Central de Bolivia

Figure 4. Effectiveness of Tax Collections



Source: IDB (2002)

Table 2. Stubborn fiscal and financial sector vulnerabilities, 1990-2004

	1990-1994	1995-1996 (privatization years)	1997-2004
Overall budget deficit			
- after grants	4.5	1.8	5.6
- before grants	6.5	4.1	7.8
Total public debt , of GDP	91 (1994) All concessional	72 All concessional	78 (2001-03) 30 at market-interest rates
Financial sector runs/closing of banks (See Annex)	1987-91. Closing of 8 banks. 1994. Bank runs. Closing of 2 banks	Bank runs	Annual bank runs. Closing of banks. Non-performing loans at 19
Banking sector lending interest rates (dollar loans)	19	17.5	16 (1997-2000) 12 (2001-2003)

### ***Explaining the higher growth rates of the early and mid-1990s.***

If macro-financial uncertainty never left the economy despite reforms, how can we explain the higher growth rates of the early and mid-1990s? In this section we attempt to do this.

Bolivia succeeded in increasing private investment – domestic and foreign—during the early and mid-1990s, despite macro-financial fragility (although much reduced compared with environment of the mid-and late-1980s). Increase in investment during that period has been associated with reforms, in particular privatization of utility companies, and with the positive external environment of most of the 1990s—a period of relative political and social stability but macro-financial stability uncertainty when low international interest rates led to a surge in capital inflows to Latin America that translated in higher availability of credit and faster growth for the whole region (Table 3, Figures 5 and 6). The boom in Bolivia's main trading partners, Mercosur and Andean economies, increased the demand for Bolivian exports. Bank growth correlation studies confirm this. In contrast to other Andean Community economies, Bolivia has a high dependency on regional exports (as opposed to non-regional exports, Table 4). For example, 80 percent of gas exports are directed to Brazil, representing around 35 percent of total exports. Depressed terms of trade since the mid-1980s were compensated by a booming coca sector (Table 3).

The economy's sectors that expanded the most during the 1990s were hydrocarbon and services (Table 5). Based on 2001 data—the only data available—these were sectors offering the highest returns on equity. In many LAC economies, growth in services during booms has been typical of economies where there is uncertainty about the appropriability of returns. Businesses that reach maturity quickly develop (e.g., construction, McDonald's, Taco Bell, etc), driven by readily available credit and favorable relative prices. (World Bank 2000a, IDB 1995, World Bank 1997 and 2001a) In Bolivia, repatriated capital (less than 1 percent of GDP annually during 1991-1992) and external bank borrowing (around 2 percent of GDP annually during 1993-1998) led to increased credit availability (Figures 4 and 5). Repatriated capital could be an indication of restored credibility but also of lack of credibility. Disinflation programs of the 1980s in Latin America led to high real interest rates as inflation came down but vulnerabilities persisted, leading to expectations of devaluations—the so-called *peso problem*. Morales and Sachs (1990) identified this problem in Bolivia right after the stabilization of mid-1980s. Credit became scarce after the shocks of 1998, in particular for the booming sector, e.g., the real estate sector, hence they collapsed first (World Bank 2004b). More on this topic in Section 2.

*Table 3. Terms of trade changes, international interest rate and GDP Growth*

	1980-84	1985-89	1990-95	1996-1998	1999-2003
Terms of trade changes	-21.2	-40.8	-42.3	0.4	-6.6 (99-01)
International interest rates (Libor)	13.05	8.28	5.74	5.80	3.99
<i>GDP Growth (%)</i>					
Brazil	1.43	4.54	1.92	2.03	1.64
Argentina	-0.08	-1.37	5.19	5.83	-2.13
Colombia	2.45	4.36	4.46	2.02	1.18
Ecuador	1.71	2.84	2.69	2.85	1.54
Peru	0.61	0.08	3.79	2.89	2.51
Venezuela	-1.83	1.51	4.02	2.11	-3.66
Bolivia	-1.85	0.98	4.20	4.78	1.88

Source: WB and IMF

*Table 4. Bolivia. Trading Partners. 2003*

Country	Regional exports	US	European Union	Rest of the World	Total	Regional Exports, per region			
						Andean Community	Mercosur	Chile	Central America
Bolivia	48	22	27	3	100	23	18	5	0.1
Colombia	31	41	19	9	100	20	2	2	5
Ecuador	26	38	19	17	100	12	2	4	5
Peru	20	28	24	28	100	7	5	2	2
Venezuela	27	54	6	13	100	9	4	1	8
Andean	27	45	13	15	100	12	4	2	6

Source: Rojas (2005). Sum differences are due to approximation of figures.

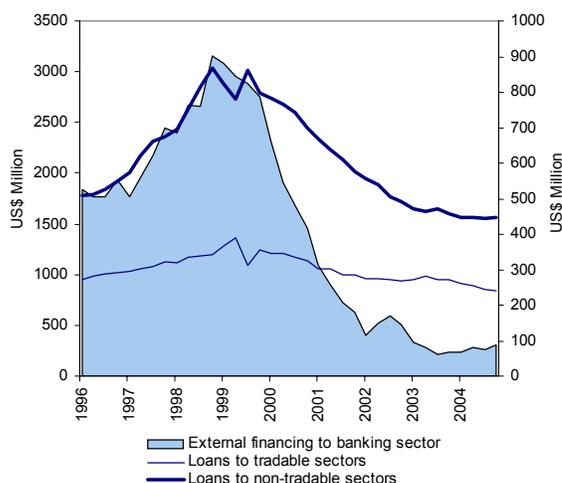
*Table 5: Real GDP Growth, Participation and Incidence by Sectors*

	Participation 1/	Growth			Incidence 3/		
		90-96	97-98	99-03	90-96	97-98	99-03
TOTAL	100.0%	4.2%	5.0%	1.9%	4.2%	5.0%	1.9%
Mining	3.9%	4.2%	-0.1%	-1.6%	0.2%	0.0%	-0.1%
Hydrocarbons	2.6%	3.0%	13.5%	5.5%	0.1%	0.6%	0.3%
Manufacture	15.2%	4.8%	2.3%	2.3%	0.8%	0.4%	0.4%
Agriculture	14.1%	4.2%	0.1%	3.1%	0.6%	0.0%	0.4%
Construction	3.1%	6.0%	20.4%	-6.8%	0.2%	0.7%	-0.3%
Commerce	7.9%	4.4%	3.3%	1.8%	0.4%	0.3%	0.2%
Transport and comm.	11.0%	5.7%	8.1%	2.5%	0.5%	0.8%	0.3%
Banking and services	11.5%	5.4%	12.6%	2.0%	0.6%	1.5%	0.3%
Public administration	11.5%	1.9%	4.2%	3.0%	0.2%	0.4%	0.3%
Other 2/	19.2%	3.4%	2.5%	1.6%	0.5%	0.4%	0.2%

Note: 1/ Corresponds to the average from 1990 to 2003. 2/ Includes electricity, water and sanitation, social, personal and domestic services, restaurants and hotels, and others. 3/ The total is the sum of contributions.

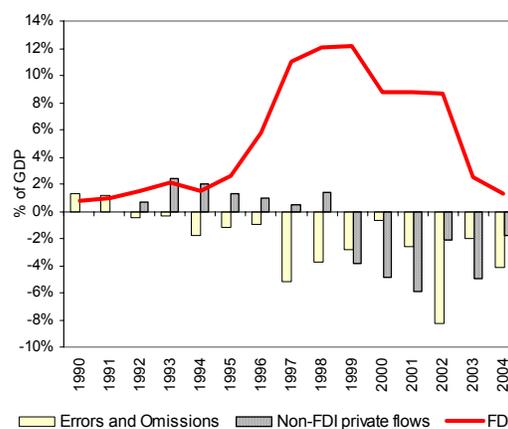
Source: INE

Figure 5. External Financing and Bank Loans



Source: SBEF

Figure 6. Capital Flows



Source: BCB

In sum, we cannot reject the hypothesis that concerns about the fragility of the fiscal situation and the financial sector in Bolivia have not disappeared, despite reforms since the mid-1980s. In recent years social and political conflicts have deepened these vulnerabilities, and several attempts to contain public expenditures and implement tax reforms have been aborted. Bank runs and closings have prevailed annually since then. Deterioration of the macro-financial environment may lead to exchange rate movements. The Bolivian economy has high dollar debts; hence changes in the exchange rate may lead to economic troubles for both the public and the private sector, in particular the financial sector. These concerns are evident in high interest rates, high inventories, and significant capital flight since the mid-1990s. Credibility issues related to government fiscal policy were already identified in Calvo and Guidotti (1992), World Bank (1994) and Antelo (1994) and more recently in Requena, et al (2000) and Kaufmann, et al (2003).

**ii) Microeconomic risks?**

Bolivia has weak *institutions*. Corruption is endemic, and enforcement of contracts and property rights is uncertain and costly. Bolivia performs poorly on indicators related to perceptions of the judicial system, the institutional quality of the national assembly, the honesty of politicians, and perceptions that state agencies and the legislative process have been captured by powerful corporations and individuals. Poor institutional quality is reflected in high costs of business. Bolivia ranks poorly in this regard, regionally and internationally (Figure 7). Bolivia's institutional quality has fallen in recent years (Figure 8 – higher numbers imply better performance, and zero is the world average). Rent-seeking activities are widespread and have crowded out investment in other activities (Morales 2004a).

Lack of enforcement of property rights has become more serious in recent years. The passage of the Hydrocarbons Law and the Government's abrogation of the *Aguas del Illimani* contract have made property rights and contract enforcement of paramount concern to foreign investors.<sup>5</sup> This business obstacle also affects Bolivia's rural sector, where *land* has been confiscated without due process by landless peasants, e.g., "los sin tierra." The view among peasant leaders is "la tierra es de quien la trabaja." Historically, land issues have played an important role in political debates. The Agrarian Reform – begun in 1953 – massively, and largely peacefully, distributed lands toward poor peasant farmers and, more broadly, it redefined the relationship between rural people and the State. By the mid-1990s, indiscriminate land allocations, coupled with allegations of large-scale corruption among public land institutions, led to a suspension of the policy and started a reform process with the enactment of the INRA Law in October 1996. However, results have been poor. The process still lacks credibility, land regularization has been limited. Box 1 presents the current challenges. These challenges with regards to land issues are daunting and meeting those demands increased political will.

#### **Box 1. Land issues and challenges**

The enactment of the INRA Law in October 1996 marks a turning point on land policy in the country. Bolivia currently faces four major challenges on land issues:

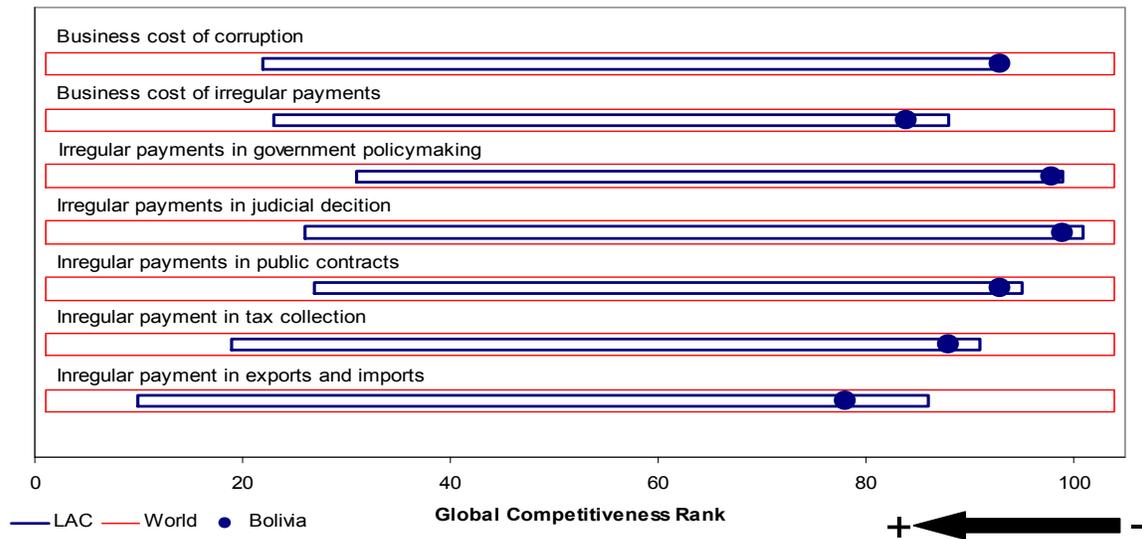
- **Restore credibility** to the agrarian process. This will require credible institutional reform (particularly of INRA), simplification of procedures for title regularization and conflict resolution, decentralization of functions, and possibly changes to the INRA law itself. A related challenge is the prevention and resolution of **land invasions** (on indigenous lands, private properties, agricultural frontier, and protected areas) in various regions of the country. Similarly, the country needs to increase its efforts to **revert to the State lands** that were illegally acquired, or are currently not fulfilling the socio-economic function (including non-payment of taxes, regularization fees). Finally, more rigorous **enforcement of payment of land taxes** is needed
- **Complete the land regularization (*saneamiento*)** process. Only about 12% of country territory has been regularized, and the legal provision for *saneamiento* expires in October 2006. An extension of this deadline seems inevitable. A related challenge is the re-titling of Original Communal Lands (TCOs) in the Andean region.
- **Address long-term national imbalances in the distribution of land.** There are great inter-regional inequalities (demand in the Western highlands vs supply in the Eastern lowlands), as well as intra-regional imbalances in the Department of Santa Cruz (poor farmers with little land and large tracts of underutilized lands). Government has only identified 45,000 ha of public lands, and these are mostly in remote regions, with little agricultural potential. Complementary mechanisms are needed to bridge the gap between unmet demand and underutilized supply of good quality land already within the agricultural frontier, particular in Santa Cruz.
- **Increase the transparency of land markets.** These are typically highly segmented, but particularly stifled in Bolivia due to uncertainty surrounding the overall "agrarian" process (enforcement of INRA law, future land taxation, less than transparent institutions) and physical insecurity (unresolved conflicts, land invasions). Also, land markets are constrained by limited access to long-term capital by potentially entrepreneurial—but poor—farmers. At the same time, there are a significant number of large farmers with unpaid debts. Commercial banks' have a growing portfolio of repossessed lands, which potentially can destabilize the financial system.

Where poor enforcement of contract and property rights prevail, investors seek safer opportunities to invest their profits or savings abroad, as suggested in recent studies.

<sup>5</sup> In fact, Bolivia's high dependence on foreign savings has its roots in this cycle as foreign governments compensated firms for non-compensated nationalizations. Klein (1982).

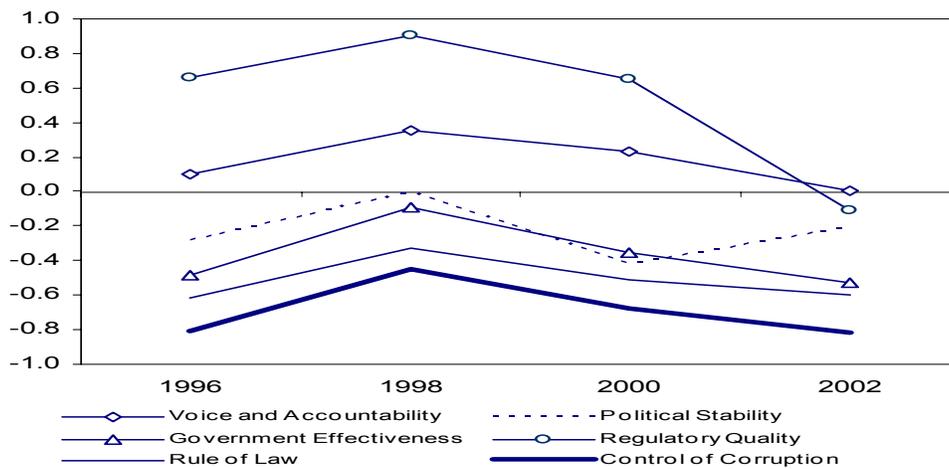
This typically happens in economies—like Bolivia's--where the productive sector is highly concentrated, making difficult the entry of new comers who could develop more businesses and increase competition. (See Johnson, et al. 2003, for experiences in transition economies). In view of significant capital outflows since the mid-1990s in Bolivia, we cannot reject the hypothesis that lack of enforcement of property rights is having an impact on firm development. The sudden drop of foreign direct investment in 2004 points to uncertainty regarding the Hydrocarbons Law as the source of today's wait-and-see attitude of investors, in particular foreign investors.

Figure 7: Government Imposed Business Costs



Source: Global Competitiveness Report 2004-2005

Figure 8: Governance and Institutional Quality Index (1996-2002)



Source: World Bank. Governance Research Indicator Country Snapshot

### ***High taxation and informality***

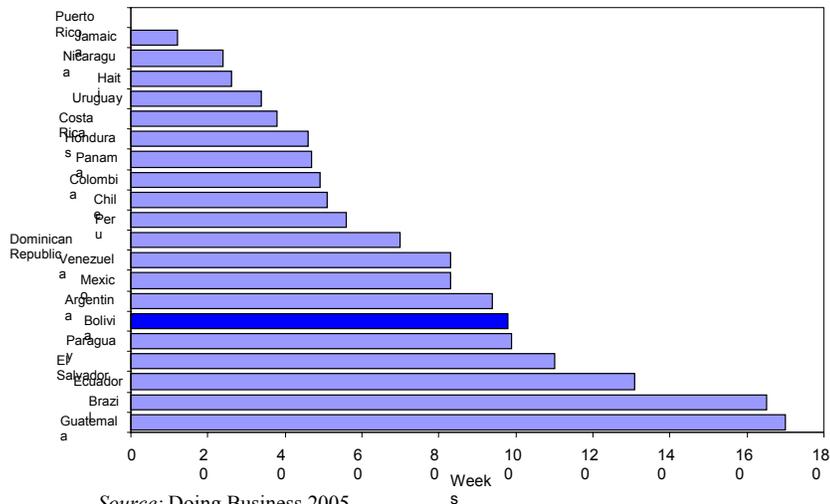
*Taxation* affects corporate activities primarily by increasing costs and promoting informality. Bolivia's corporate and value added tax rates (25 and 13 percent, respectively) are close to regional average and international standards and the tax structure is fairly simple. But, reportedly, tax exemptions for small businesses discourage firms from expanding and lead to a large number of firms under the same owner to avoid taxes that increase production costs.

*Tariffs* are low by international standards – 0 to 10 percent – but bribes to facilitate smuggling and/or take goods from customs quickly add significant costs. *Customs* have been improved, but it had been estimated that bribes were as high as one percent of the value of imports. This is important, given the large component of imported inventories that firms keep in relation to other countries (World Bank 2001b). With unpredictable imports due to all uncertain barriers, in particular non-tariff barriers to Bolivian exports, exchange rate levels, interest rates, and domestic shipping delays, large (small) firms keep inventories of inputs and final goods for 50 (27) production days. This leads to additional financial costs of 16 (over 20) per cent of the cost of inputs or 9 (12) percent of the costs of sales for large (small) firms (World Bank 2001b).

High *transport costs* also tax firms. Unpredictable transport costs due to poor maintenance also contribute high production costs, as discussed below. Security also imposes significant additional business cost. Investors in some parts of the country, e.g., in El Alto, face costs to protect against riots and looting. Road blockages and street violence have led some businesses to close. The costs can be so severe that in El Alto, for example, around 60 firms are trying to avoid closing by entering programs to restructure. Another 60 firms have already closed (Superintendencia de Empresas).

High *non-wage labor costs* add to government-imposed business costs. These are social benefits, pension, health insurance, bonuses, etc., and amount to around 50 percent of total labor costs. Severance payments are much higher than Chile's and Colombia's (Figure 9). This "taxation," together with value added tax on imports of around 25 percent, help to explain Bolivia's high informality. Some labor costs are future income for employees, hence removing them may lead to heightened pressure for wage increases, no change in labor costs, and no impact on informality. However, high non-wage labor costs may be a deterrent of new formal business. This is not measurable, hence we cannot conclude about labor costs as potential binding constraints for growth.

Figure 9. Private Sector Severance Payment in Latin America

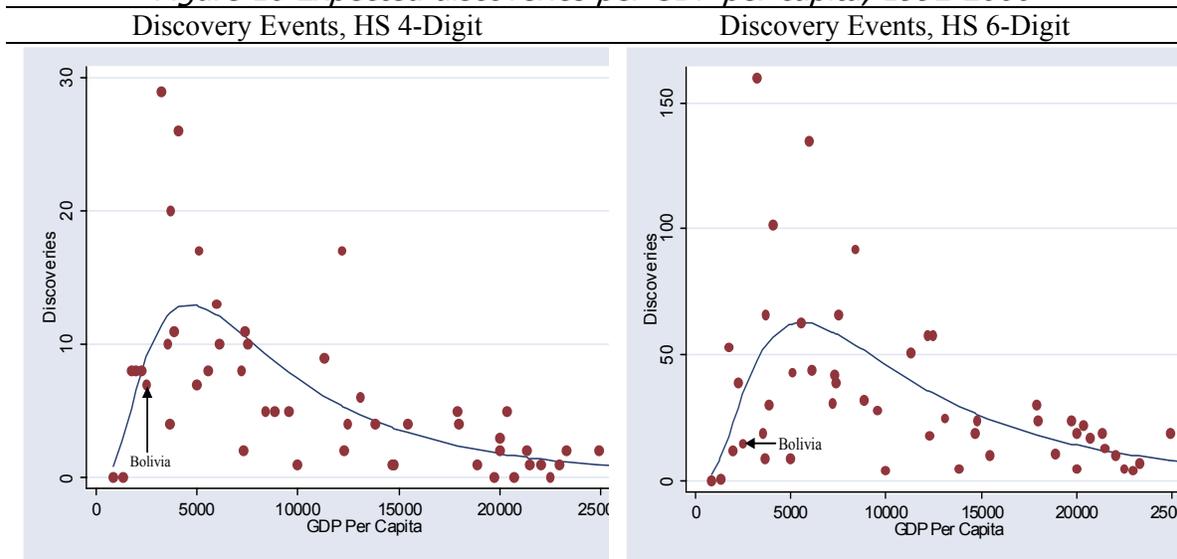


### **Market failures: Adequate productivity and innovation?**

Productivity is low across sectors in Bolivia. Moving firms from low productivity firms to high productivity firms requires flexible labor markets, agile business regulations, and competitive financial sectors. The Bolivian economy lacks them all (more on the financial sector below). Innovation or the ability to identify profitably products attractive for new investment does not seem to be lacking in Bolivia. During the 1990s, the number of innovations produced has virtually been what could be expected given the economy's GDP per capita (Klinger and Lederman (2004)). This result holds both considering 4 and 6 digits desegregation of export products (Figures 10).

Furthermore, the recent export concentration does not seem to be associated with lack of innovation in exports. Table 6 shows that larger number of products has been exported over the last years, with the highest performance registered in 2004. Something similar has happened to the number of destination countries. A positive net creation (i.e., number of creation minus the number of destruction) of exported items reflects increasing dynamism in the export sectors.

Figure 10 Expected discoveries per GDP per capita, 1992-2000



Note: It was estimated using the following regression:  $\lambda = \beta_0 + \beta_1 \ln(\text{gdp\_pc}) + \beta_2 \ln(\text{gdp\_pc})^2$ . Where  $\lambda$  is the observed number of discoveries during the period of the study (1992-2000), and GDP per capita is adjusted using PPP methodology.

Source: Klinger & Lederman 2004

Table 6 Number of products exported from Bolivia<sup>1</sup>

	Number of products	Number of countries	Number of lasting exported products <sup>2</sup>	Number of new export products <sup>3</sup>	Number of interrupted export products <sup>4</sup>
1995	687	29			
1996	715	29	454	261	233
1997	789	35	494	295	221
1998	816	37	554	262	235
1999	878	37	568	310	248
2000	897	38	631	266	247
2001	890	35	655	235	242
2002	884	38	591	293	299
2003	901	39	694	207	190
2004	1,329	45	760	569	141

Note: <sup>1</sup> Based on tariff categories (*partidas arancelarias*). Nandina 10-digit classification

<sup>2</sup> products that are again re-exported (compared to the previous year)

<sup>3</sup> codes that are created or reappear year after year

<sup>4</sup> codes that disappear year after year

Source: UNDP – Bolivia – “*Más Alla del Gas*”, working paper lead by George Gray (forthcoming)

In sum, stubborn dollarization, capital outflows and virtually stagnant investment in non-mineral and soy sectors suggest that there is concern about appropriability of returns on investment. The sources of this concern are macroeconomic fragility as a result of political and social instability. Recent studies suggest that lack of enforcement of property rights could also be a source of outflows of profits. Lack of enforcement of contracts and property rights have worsened in recent years, as well as political and social insecurity and associated crime that affects their business operations. These factors lead to excessive risks that deter new investment or lead to those of short maturity that may not be quality investment in terms of, for example, sustained employment generation. Preliminary results suggest that Bolivia does not face innovation constraints. Thus, we cannot reject the proposition that the high risk of appropriability of returns due to macro-financial instability magnified by recent increased in lack of enforcement of contracts and property rights are Bolivia's binding constraints to growth.

### ***B. Low social returns? Geography, education and infrastructure***

Are social returns low? Let's explore the adequacy of geography, education and infrastructure.

*Geography.* "Geographical divisions imply that different groups of a society may face different conditions that affect their economic possibilities and may have different economic interests, and social problems, all of which can influence the political game, ultimately, all aspects of development" (Gallup, Gavia and Lora (2003)). Tropical highlands generate the lowest GDP per capita compared to other types of geography. In Latin America in terms of 1995 dollars tropical highlands generate GDP per capita of around \$4300, whereas temperate zones (southern cone) and highland and dry zones (southern cone) generate \$7500 and \$ 9700. Being Bolivia a landlocked country with a variety of terrains, these GDP per capita differences calls for a deeper understanding of the impact of Bolivia's geography on growth.

Bolivia's different regions have evolved differently in terms of growth and poverty. Geography and ethnolinguistic fragmentation could have contributed to this, and perhaps to Bolivia's inability to grow at rates higher than those reached during the early and mid-1990s (4.5 percent on average annually) that were years of relative political and social stability. Further research is needed in this regard. Nevertheless, the Government is trying to ameliorate unfavorable aspects of these characteristics including strengthening decentralization and ensuring quality public services for the whole population and across regions.

*Education.* Bolivia has made significant improvements in this area, although somewhat limited to enrollment. Bolivia ranks well with regards to school enrollment, particularly in primary and tertiary education. The quality of education leaves a lot to be desired (Urquiola, 2000). Could more (and better) education make a significant impact in accelerating growth? Low returns to education (in relation to other countries, Figures 11) suggest that education is not a binding constraint in Bolivia. Besides, if education were a binding constraint to growth, then expected wages for educated people would be high and

educated people would be emigrating from other countries to Bolivia. Instead, there is increasing brain drain. Bolivia already ranks worst internationally with regards to brain drain – which is another type of capital flight (The Latin America Competitiveness Report, 2004-2005). The probability of being out of work is higher among more educated people--with the exception of the very few highly educated people (Table 7). All these point to binding constraints other than education and training to faster growth today in Bolivia. For a deeper discussion of Bolivia's education sector see World Bank (2004a)

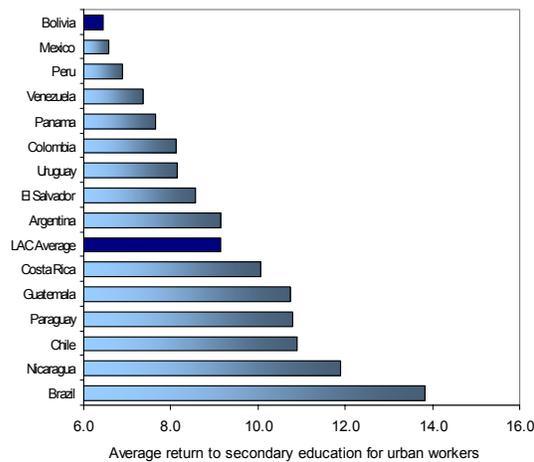
*Table 7 Urban Unemployment Rates by Educational Level*

	Primary Incomplete	Primary Complete	Secondary Incomplete	Secondary Complete	Any Tertiary
Bolivia	3.9	3.2	11.5	8.8	5.2
LAC Region					
Maximum	22.9	20.4	23.7	23.2	15.1
Median	5.1	5.5	7.9	8.6	5.2
Minimum	0.7	1.1	1.6	1.6	1.7

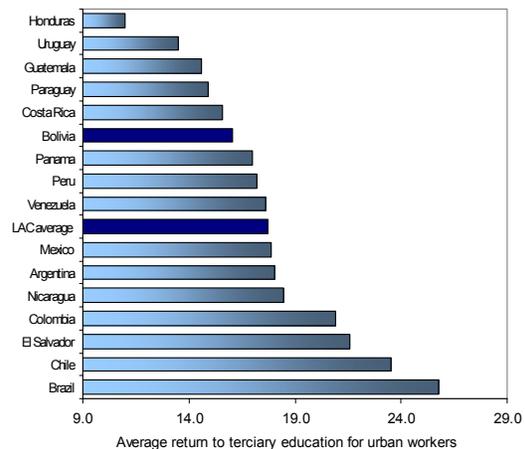
Note: Information corresponds to the most recent observation between 1998 and 2001. Sample: Males and Females ages 15 to 64.  
*Source:* IDB (2003).

*Figures 11: Marginal Returns to Education, Urban Areas*

*Marginal Returns to Secondary Education in Urban Area*



*Marginal Returns to Tertiary Education in Urban Area*



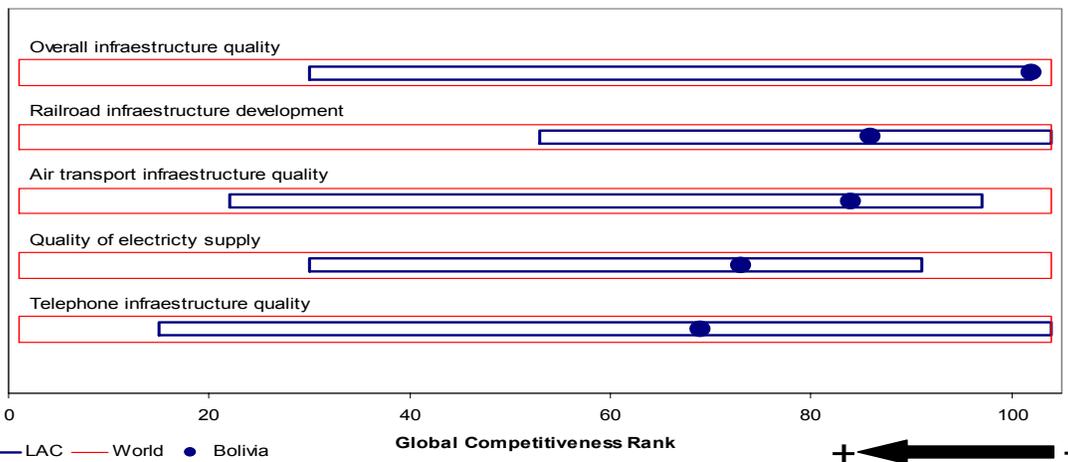
Note: Information corresponds to the most recent observation between 1998 and 2001. Sample: Males and Females ages 15 to 64

*Source:* IDB (2003)

*Infrastructure.* The private sector does not find the supply of infrastructure a key obstacle, but they do find the poorly maintained roads make it difficult to predict costs (World Bank 2001b). Bolivia's topography and demography, together with its small

economy, lead to low intensity-use – and high unit costs – for all transportation modes in relation to other countries' use (Table 8 and 9).<sup>6</sup> A pipeline is used for gas exports, and about half of non-gas exports are shipped via roads and railroad. About 70 percent of imports arrive via roads, while the rest use air transport. These call for good quality infrastructure, yet Bolivia ranks low internationally in the quality of infrastructure (Figure 12). Returns on roads rehabilitation are estimated to be in the range of 40-50 percent (World Bank 2001c) and donors are funding projects in this area. A plan that envisaged centralizing road management under a single body and offering concessions to the private sector was highly politicized and made little progress. Bolivia ranks poorly in telecommunication network readiness (99 in 104 countries, the higher the number, the poorer the readiness) reducing the likelihood of use of internet or cell phones that have proven important for the development of remote areas in other developing countries (The Latin America Competitiveness Report, 2004-2005). Unpredictable road blockages and heightened uncertainty about enforcement of property rights, in particular those of foreign companies, have been the dominant constraints to additional investment in infrastructure including electricity and telecommunications. For a deeper discussion of Bolivia's education sector see World Bank (2004a).

*Figure 12: Summary of Infrastructure Indicators*



Source: Global Competitiveness Report 2004-2005

<sup>6</sup> For example, Bolivia has the lowest coverage of paved roads and the highest operating cost among CAN countries (Table 19.2 in Bello Mendoza, 2002).

*Table 8: Road network in LAC countries*

	Road density (km roads/ thousand km <sup>2</sup> )	Paved roads ( )	Motor vehicles per km of road
<b>Bolivia</b>	<b>48.9</b>	<b>6.5</b>	<b>8</b>
Ecuador	152.1	18.9	14
Peru	56.7	12.8	15
Paraguay	72.5	9.5	n.a
Brazil	201.8	5.5	17
Chile	105.4	19.4	25
Guatemala	129.5	34.5	45
Nicaragua	146.4	11.0	8
Honduras	121.5	20.4	28

Source: World Bank: *World Development Indicators*, 2002.

*Table 9: Air Travel in Bolivia and other LAC Countries*

	Air passengers carried (‘000)	Air freight (million ton- km)	Air passengers/ Population
<b>Bolivia</b>	<b>1757</b>	<b>15</b>	<b>2.2</b>
Ecuador	1181	15	0.9
Peru	2125	35	0.8
Paraguay	266	n.a.	0.5
Guatemala	506	3	0.5
Nicaragua	61	1	0.1

Source: World Bank: *World Development Indicators*, 2002.

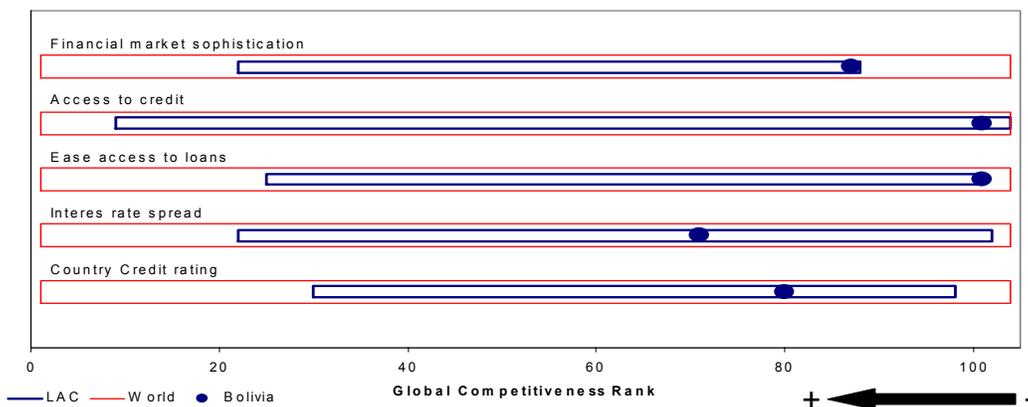
### **C. High cost of financing?**

Global surveys rank Bolivia poorly in access to credit, regionally and internationally (Figure 13). In Bolivia, the capital market is incipient; hence it is not a significant source of funds. Firms financed themselves primarily through retained earnings, like firms from the rest of the region and middle-income countries (Table 10). The banking sector provides around 20 per cent of total financing which is typically used for working capital. A volatile social and political environment has led firms not to borrow, and concerns about the viability of firms that were affected by the shocks of the late 1990s have led to cautious bank lending activities. As a consequence there is high liquidity in the banking system (2004b) and deposit and lending rates are low. This risk-averse behavior of banks has been identified in most countries of the region fearing a financial crisis like Argentina’s and Uruguay’s in 2002.

This particular situation puts constraints in our analysis as interest rates do not reflect today’s credit situation. In the past, bank credit in Bolivia has been volatile and expensive.<sup>7</sup> Besides, what interest rates should we pick for our analysis, bank lending rates, financial houses lending rates, commercial rates? Figure 13 shows the variety of interest rates on which to base the analysis. Also, it is well known that the financial system determines interest rates according to its relation with the client. Given these limitations, in what follows we discuss the credit situation faced by Bolivian firms, but putting more emphasis on the availability of credit rather on its costs. We analyze access to international loans as well as domestic loans. In this context we also discuss the economy’s slowdown of the 1990s.

<sup>7</sup> This volatility extends to microfinances although to a smaller extent. (Gonzalez Vega, 2004).

Figure 13. Summary of Access and Cost of Finance Indicators



Source: Global Competitiveness Report 2003-2004

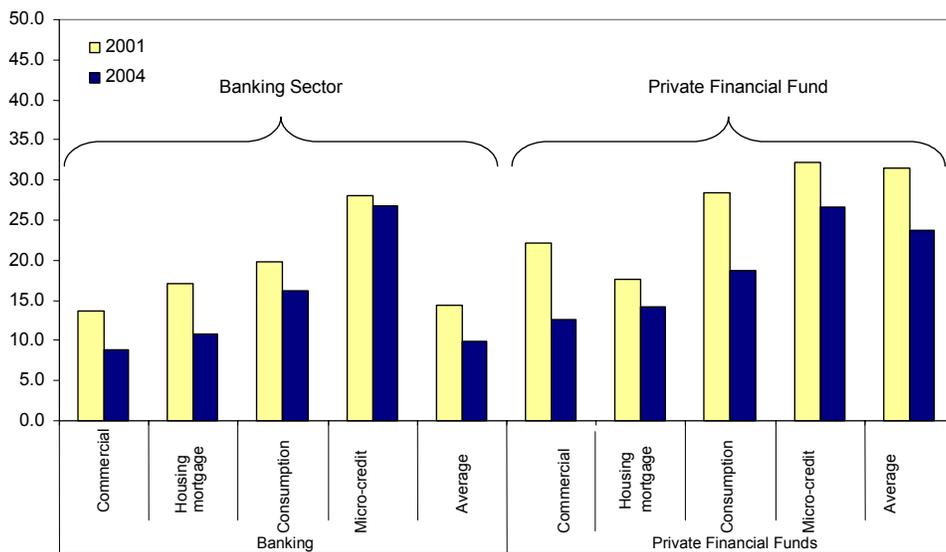
Table 10. Sources of Financing for Bolivian Companies

	Retained earnings	Domestic banks	Foreign banks	Investment fund or special development financing	Equity	Supplier credit
Latin America	45.9	21.5	4.3	1.6	1.8	9.5
Lower-middle-income	46.8	13.6	2.8	1.7	2.0	7.4
OECD	51.4	14.5	1.2	1.7	7.8	4.2
<b>Bolivia</b>	56.3	21.9	2.5	0.1	0.9	8.7
Service	68.5	17.2	1.45	1.1	0.0	0.0
(without construction)						
Construction	61.7	25.0	0.00	0.0	0.0	0.0
Manufacturing	50.2	28.3	2.30	0.0	1.2	2.0

Note: Because of the small number of observations, the numbers for Bolivia are averages and the numbers for country groups are medians.

Source: World Bank (2004a).

Figure 14. Interest Rates (%)



Source: SBEF

*Access to International and local loans.* There is free movement of international capital in Bolivia. During the 1990s access to international loans translated into abundant bank domestic credit (Figure 5), thus relaxing the credit constraints faced by domestic firms, in particular small firms.<sup>8</sup> But credit remains available to few: in Bolivia loan exposure is highly concentrated, with loans above US\$100,000 accounting for about 70 percent of the banks' loan portfolio but for less than 4 percent of the loans. Bank deposits are also highly concentrated: the three largest banks (all domestic) account for half of the system's deposits (Cuevas 2002).

Limited availability of credit appears to be one source of high interest rates during the 1990s. Interest rates for small firms are almost twice as high as for larger firms, and it is higher in the non banking system (Figure 14). As in most developing countries this is partly due to inability of small firms to build up collateral and other financial qualifications. Informality adds to banks' concerns because informal companies generally present unreliable accounts. Only relatively large companies (with paid-up capital in excess of \$80,000) are required to present audited financial statements and there are no consolidation requirements.

Another source of high interest rates is high spreads—i.e., the difference between deposit and lending rates. In Bolivia, as in the rest of Latin America (with the exception of Chile) bank spreads have not come down, despite improvements in efficiency, regulatory forbearance and financial liquidity. Requena et al (2000) identified macroeconomic risks as the source of high spreads in Bolivia. There seems to be no direct relation between non-performing loans (NPLs) and spreads. In recent years, NPLs increased rapidly while spreads remained high but did not increase. Interestingly, spreads have been low during crises or bank liquidations—reflecting expectations of government bail outs (Requena et al, 2000). This is consistent with the private sector reporting that they are not worried about the macro-financial situation. Thus, poor financial intermediation does not appear to be a binding constraint to growth in Bolivia.

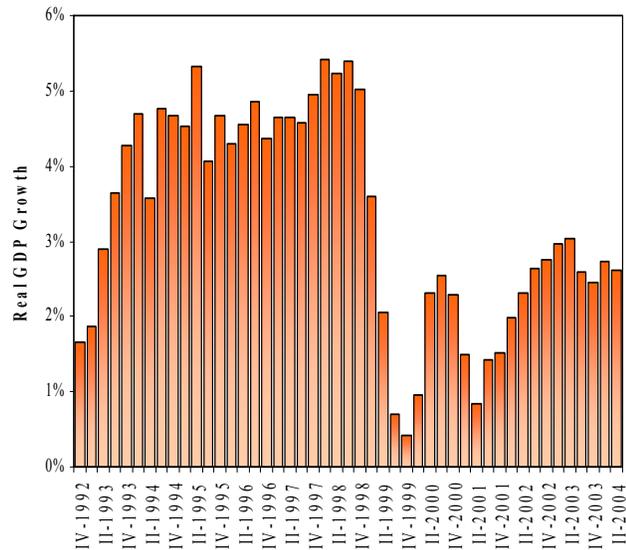
### ***Bolivia's GDP growth deceleration in the late 1990s and credit availability.***

Bolivia's sudden drop in GDP growth in 1999 had external causes that translated in a higher cost of and limited availability of credit, forcing indebted firms to slowdown production and to default on their bank loans. In Bolivia GDP growth dropped from an average of 4.5 percent during 1992-1998 to around 2 percent in 1999 (Figure 15).

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<sup>8</sup> These have been gradually decreasing since the 1970s when the inflation rates and capital flight started to increase fast. After the stabilization of the mid-1980s repatriation of capital took place, but did not last long: since the mid-1990s, a large proportion of domestic savings have been invested abroad again (Figure 5).

Figure 15. Bolivia. GDP Growth



During mid-1990s, Bolivia, like Chile, reached credit levels of around 55 percent of GDP (from around 25 percent in 1991), which is quite high by regional standards. The private sector – largely banks – borrowed abroad, reaching around 2 percent of GDP during 1993-1998. This credit episode has been associated with large capital inflows and terms of trade improvements. In the face of financial troubles in the region due to the reversal of this bonanza in the late 1990s and its impact (i.e., devaluations in Argentina, Brazil and Chile, and slowdown in Bolivia’s trading partners lowering demand for Bolivian exports), the Bolivian private sector advanced payment of external loans fearing a devaluation of the Bolivian currency [non-FDI flows in Figure 5].

The behavior of the banking just described led to a credit crunch that deepened as banks increased provisions to strengthen soundness and *Banco Santa Cruz’s* reduced its operations (Morales 2004b). During the slowdown, as credit became costlier and scarcer, surviving firms used retained earnings to sustain working capital at the expense of investment, thus leading to a drop in investment (World Bank 2004b and 2001b). This was not unique to Bolivia. The whole Latin America region was affected by this systemic shock (Galindo and Schiantarelli 2003). The shocks hit hardest the service sectors (including construction and commerce) that were highly dollar-indebted but traded in domestic currency and make more use of retained earnings to finance activities than other sectors (Table 5) (World Bank 2004b). Internal developments including deepening of coca eradication since 1998 that reduce liquidity in the economy (IMF, 2005) and political uncertainties associated with presidential elections in 2002 also contributed to deepening the credit crunch and to deceleration of growth.

This discussion on the cost (better the availability) of financing suggests that (i) Bolivia was able to attract significant foreign savings (in addition to foreign direct investment) when they became available; (ii) interest rates have been high due to poor competition practices and high spreads in turn due to macroeconomic policy risks (as opposed to bank inefficiency); and that (iii) a highly concentrated banking and corporate sector appears to make available credit for just a few. The external shocks of the late 1990s increased the cost of credit and made credit scarcer, which highlights the vulnerability to credit shocks of firms that expanded their business during credit booms that lifted their credit constraint. This is particularly important for firms in the service sector. It also highlights the vulnerability to systemic shocks of the export sector, given a large share of "regional" exports. Given high macroeconomic policy risks, we cannot

conclude unambiguously that the cost of finance is Bolivia's a binding constraint to growth.

## **2. Conclusions**

By the late 1990s Bolivia had become the top economic reformer of Latin America. With an improved external environment, Bolivia's growth averaged annual 4.5 percent during mid-1990s. As a result of external and internal shocks, in late 1998 growth suddenly decelerated to an annual average of 2 percent during 1999-2000. The discovery of new gas reserves and a new pipeline to transport gas to Brazil contributed to sustain positive growth rates. As a consequence, and in contrast to other Latin American countries, Bolivia did not suffer a full-blown financial crisis as a consequence of the shocks of the late 1990s. Bolivia's growth performance in the last 20 years has disappointed many, given the deep reforms since the mid-1980s. This paper aimed at better understanding the binding constraints to faster growth in Bolivia.

Based on Hausmann et al growth diagnostics, we cannot reject the hypothesis that the binding constraint has been high risk of appropriation of returns due to macro and micro risks, as reflected in high interest rates, high inventories, stubborn dollarization, capital outflows and, more recently, brain drain. Sources of uncertainty are fiscal and financial sector fragility in a context of highly dollar indebted firms; poor enforcement of contracts; a poor bankruptcy law that does not allow for a quick firm exit, and a high concentration of export products and markets that does not allow for a quick adjustments to shocks. Preliminary analysis suggests that lack of innovation is not a binding constraint and that the rate of innovation is adequate given Bolivia's GDP per capita.

Fiscal and financial sector vulnerabilities have been the outcome of unpredictable policies and weak institutions, and these in turn the result of ingrained political and social problems, which have deepened in recent years. Political uncertainty, street protests and road blockages, and lower enforcement of property rights since 2003 have chilled the private sector, including foreign investors. A fragile fiscal situation and financial sector threatens the stability of the exchange rate and interest rates and hence the profitability of firms. While fiscal balances have been difficult to sustain due to social pressures, monetary and exchange rate policy enjoy credibility. Furthermore, the financial system is one of the best supervised systems in the region and the real exchange rate has been somewhat stable at an apparently equilibrium level.

High risk of appropriability of private returns may have a direct negative effect on growth by creating the perception that Bolivia is a public-sector driven economy, i.e., that the market is not really open, thus deterring firm growth and newcomers. It may also have an impact by deterring innovation and export diversification. This is quite worrisome for Bolivia which, as indicated, has a high concentration of regional exports and makes the economy vulnerable to systemic shocks like the international financial crisis of the late 1990s.

We reject the hypothesis that infrastructure and education are binding constraints today. Roads and aviation are Bolivia's most important means of transportation, and they

are underutilized. Roads maintenance however is poor and efforts are underway to improve it. There are few potential unfunded investments in transport with high rates of return. With regard to education, given the emigration of workers seeking better opportunities abroad, it is more likely that educational improvements would accelerate the rate of emigration rather than the rate of growth. Brain drain has increased in recent years and together with private capital outflows is a deterrent of business expansion, in particular of managerial capacity and innovation.

While we have a good understanding of the finance situation, we cannot conclude whether or not the high cost of finance is a binding constraint. As discussed, today, reported interest rates are low because of high banks' liquidity and weak demand for loans of a troubled risk-averse productive sector. Hence, interest rates are of limited help to conclude on credit scarcity as a binding constraint. The high cost of credit and difficult access to financing are associated with poor domestic competition and high macroeconomic policy risks—these by increasing interest rate spread. During the early and mid-1990s, interest rates were high, suggesting scarcities of loanable funds. Increased availability of local credit in early and mid-1990s was the result of the reforms and available external savings. Despite high macroeconomic and financial sector risks, as the credit constraint was lifted, firms expanded and new firms developed in particular in the service sectors attracted by favorable relative prices also. But when external constraints tightened and credit became costlier and scarcer in the late 1990s, firms suffered production disruptions. Surviving firms used retained earnings for working capital as opposed to investment, hence this stagnated. The current poor bankruptcy law has not contributed to a quick resolution of troubled firms, making it difficult to resume fast growth in sectors other than the primary export sectors.

More analysis is needed to assess whether or not we can reject the hypotheses that high non-wage labor costs (e.g., severance payments) are binding constraints. In Chile, for example, high severance payments became a binding constraint during the shocks of the 1990s as firms tried to adjust to the increased cost of credit (World Bank, 2005). However, we cannot reject the hypothesis that high non-wage costs are deterring new business and informality.

Reducing appropriability risk requires clear and consistent rules of the game across the public sector. It also requires that institutions protect the openness and fairness of markets to any new entrant, not the interests of the incumbent firms. In this regard, priority is to ensure enforcement of contracts and honoring property rights. World Bank (2004a and 2004b) recommended that reforms are needed to ensure fiscal balances and a dynamic productive sector. These would include controlling public expenditures and improving tax administration to reduce the fiscal deficit, sustained strengthening of the financial sector and an effective bankruptcy law. Stronger institutions will contribute to macroeconomic stability, hence to build up credibility and make Bolivia attractive to investors. Much remains to be done on these by all Bolivians. As the current binding constraints are relaxed, information and coordination problems could emerge, in particular in the rural sectors. In other countries, the use of mobile phones and internet has contributed to promote business through better coordination. Thus, advancing in

rural electrification and communication where there are adequate economic returns may become an additional challenge.

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*Annex. Financial Sector Developments, 1987-2003*

<i>Year</i>	<i>Event</i>	<i>Measures</i>
1987-91	Mandatory closing of 8 banks (4 banks in 1987; 1 in 1988; 3 banks in 1991)	
1994	Bank run. Mandatory closing of two banks (Banco Sur y Cochabamba) representing 11 of total assets of commercial banks Other banks remain weak.	
1995	Severe liquidity problems.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Policy to restructure banks.</li> <li><input type="checkbox"/> Improvements in prudential regulation</li> <li><input type="checkbox"/> New Central Bank Law.</li> </ul>
1996		Official cost of bank restructuring: 4 of GDP
1997	<ul style="list-style-type: none"> <li><input type="checkbox"/> Run on deposits of one restructured bank in February. Bank bought by foreign bank.</li> <li><input type="checkbox"/> Closing of bank BIDESA</li> </ul>	Basel system of risk weighting setting minimum capital-asset ration.
1998	<ul style="list-style-type: none"> <li><input type="checkbox"/> Run on deposits of largest commercial bank in February (Banco de Santa Cruz). Bank purchased by foreign bank (Banco Santander Central Hispano).</li> <li><input type="checkbox"/> Multibanco and Banco de la Paz merged with foreign banks (Citibank y Grupo Credicorp).</li> </ul>	Law strengthening powers of the Superintendence of Banks
1999	Mandatory closing of Banco Boliviano Americano representing 4 of assets of. Sold to Banco de Credito.	<ul style="list-style-type: none"> <li><input type="checkbox"/> New law modifies regulatory framework of financial system that buffers impact of bank closures.</li> <li><input type="checkbox"/> Gradual tightening of provisioning requirements</li> </ul>
2000	<ul style="list-style-type: none"> <li><input type="checkbox"/> Banco Santa Cruz in trouble. Losses represent 84 of losses of all national private banks.</li> <li><input type="checkbox"/> Closing of branch of ABN AMRO Bank NV</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Questionable measures to encourage reprogramming of loans.</li> <li><input type="checkbox"/> Restructuring of largest bank in the system.</li> <li><input type="checkbox"/> Change in loan classification criteria to improve the quality of bank loan portfolio.</li> <li><input type="checkbox"/> Transparency in interest rates</li> </ul>
2001	Non-performing loans up at 16.0 from 6.6 in 1999.	<ul style="list-style-type: none"> <li><input type="checkbox"/> Launching of FERE that provides credit to banks that reprogram loans to clients with the capacity to repay.</li> <li><input type="checkbox"/> Launching of PROFOP to provide one-time subordinated credits to capitalize banks.</li> </ul>
2002	15 drop in bank deposits in the context of election uncertainty during end-May –early July.	
2003	<ul style="list-style-type: none"> <li><input type="checkbox"/> January. Unprovisioned non-performing loans high.</li> <li><input type="checkbox"/> February. Drop in deposits in the context of social uprising.</li> <li><input type="checkbox"/> Non-performing loans at 19 per cent of total loans.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Laws to strengthen bank resolution mechanisms and facilitate prompt corrective action for banks with problems in Congress.</li> </ul>

## Endnotes